



September 18, 2014

Kristine Koch  
Remedial Project Manager  
United States Environmental Protection Agency  
Region 10  
1200 S.W. Sixth Avenue, Suite 900  
Seattle, WA 98101-3140

**RE: REQUESTED EDITS TO SECTION 10.0 OF EPA'S DRAFT REMEDIAL INVESTIGATION REPORT, PORTLAND HARBOR SUPERFUND SITE**

Dear Ms. Koch,

On behalf of Bayer CropScience (BCS), Golder Associates, Inc. and AMEC Environment & Infrastructure, Inc. have prepared this letter outlining suggested edits to Section 10.0 of EPA's Draft Remedial Investigation Report as it relates to certain factual statements made regarding the former Rhone-Poulenc property. BCS is a funding member of the Lower Willamette Group (LWG). The suggested edits address factually incorrect statements and more accurately reflect the record.

BCS has retained EPA's redline/strike-out edits to the referenced text (as submitted to LWG on July 29, 2014). EPA's text edits appear in [this color](#). BCS's requested edits appear in [this color](#).

#### **General Comment**

In multiple locations, the text refers to the former Rhone Poulenc property "pesticide manufacturing facility" (i.e., see Sections 10.2.6.2, 10.2.7.2, 10.2.7.4). Insecticides were not manufactured at the former Rhone Poulenc property; they were only formulated. This is an important distinction because insecticide manufacturing involves a variety of processes including mixing, reacting, distilling, water washing, drying, cooling, solidification, breaking, crushing, grinding and milling. These processes generate significantly more waste than the more simple process of insecticide formulation. Insecticide formulation merely involves mixing purchased ingredients (technical grade products) with other materials (solvents, emulsifiers and diluents) to form a marketable product for packaging. Only herbicides were manufactured at the former Rhône-Poulenc property.

If the term "pesticide" is used to refer to both insecticides and herbicides, then reference to the former Rhone Poulenc facility as a "pesticide manufacturer" is only partially correct. BCS's preference is to make the distinction between "manufacturing" and "formulating" depending on whether reference is being made to insecticides or herbicides, respectively. When more generally referring to the former Rhone Poulenc facility, it is most appropriate to refer to the site as a former herbicide manufacturing and insecticide formulation facility.

We also note that there is a lack of consistency in how reference to potential non-point, anthropogenic sources are described in subsections relating to potential sources. For example, under Section 10.2.2.2 - Potential PCDD/Fs Sources and Pathways, the text refers to "non-point sources related to anthropogenic background" (see below for complete text). Under Section 10.2.6.2 – Potential Sources and Pathways of Total Chlordanes, the text states that "the distribution of chlordane in nearshore sediments indicates that other sources are present". Under Section 10.2.7.2 - Potential Aldrin/Dieldrin Sources and Pathways, the text states that "atmospheric deposition is a potential historical and current pathway". These statements all seemingly imply that there are non-point (i.e. non-site specific), anthropogenic sources of these

constituents. Unless the differing statements are intended to reflect a difference in the sources or pathways for each of the constituents, it would be best to standardize the language. BCI recommends using text similar to that currently used for total chlordanes (Section 10.2.6.2), which is the least speculative in terms of identifying the source.

#### **Section 10.2.2.2 Potential PCDD/Fs Sources and Pathways**

BCS prefers that EPA retain the text of this section as originally presented by the Lower Willamette Group (LWG). However, at a minimum we request the following revisions to the text to accurately describe the occurrence of PCDD/Fs in the area:

- Add text related to non-point sources and anthropogenic sources, consistent with text earlier in this section.
- Delete the orphaned text “Gould Electronics, Rhone Poulenc”. We assume reference to these sites is an unintentional editing artifact because specific references to other sites were also deleted. There is no current stormwater pathway from the former Rhone Poulenc property to the river. Currently site stormwater is collected, treated, and discharged by pipeline through WR-6, located at RM 6.9W, under a valid NPDES permit.

The following presents the text with these requested edits.

~~In general, stormwater transport containing atmospheric depositional PCDD/Fs from regional combustion sources is expected to be the most significant current pathway for PCDD/Fs to enter the Study Area from adjacent upland sites and from non-point sources related to anthropogenic background within and upstream of the Portland Harbor Superfund Site. As stated above, a primary source of PCDD/Fs in the environment is also atmospheric deposition from global sources. PCDD/Fs were not sampled for during the Round 3A and 3B stormwater sampling program but, based on their ubiquitous nature, PCDD/Fs would very likely be detected in stormwater from all areas sampled. A current known complete pathway has been identified for Triangle Park and City of Portland Outfall OF-22B. The Triangle Park property is undergoing cleanup according to a BFPPA with EPA. Gould Electronics, Rhone Poulenc, and M&B, are identified as having known complete historical pathways. Other potential sources include structure fires, especially at wood-product facilities, and trash burning on upland sites adjacent to the river. Several significant fires have occurred in the harbor, including M&B in 1966, a grain elevator on the Goldendale Aluminum property in 1966, and a cooperage on the central portion of Willamette Cove in 1967 (Oregonian 1966a,b; 1967).~~

#### **Section 10.2.2.4 Relationship of Sources to Distribution of PCDD/Fs**

The first sentence of the EPA edited paragraph below (beginning with “One of these subareas”) is grammatically incorrect and is without context as edited. LWG recommended that EPA retain the deleted text prior to this sentence. BCS concurs with this recommendation. BCS recommends deleting the grammatically incorrect sentence in its entirety.

However, BCS’s main concern relates to the second sentence, which is misleading on at least two levels. First, it suggests that the former Rhone-Poulenc property is located adjacent to the river. This is not true. The former Rhône-Poulenc plant area is located approximately 2,000 feet from the river. The properties located along the western side of the river between RMs 6.5 and 7.5 are Siltronic and Arkema.

Second, EPA’s edits delete reference to all potential PCDD/F sources other than Rhone-Poulenc and Arkema. In doing so, EPA misleadingly suggests that these two properties are the only PCDD/F sources in the study area. This is incorrect. Consistent with EPA’s other deletions in this section, we recommend deleting reference to specific sites, particularly if remaining text previously deleted by EPA is not reinserted as recommended by LWG.

The following presents the text with these requested edits (retain highlighted text).

~~PCDD/Fs are currently and historically associated with combustion, incineration, cement kilns, boilers and industrial furnaces, vehicle emissions, fossil fuel power plants (e.g., coal), and backyard burning (e.g., refuse piles, burn barrels); historical operations (EPA 2006b) also include smelters, wood treatment facilities, herbicide formulation industries, power plants, pulp and paper, and PCDFs from chlorine production processes (see Panel 10.2-2B). Detected TCDD TEQ levels in most Study Area sediments are comparable to upriver background levels (OC-equivalent 95 UPL of 3.3 pg/g dry weight was determined for the upriver reach). However, there are a number of distinct nearshore subareas scattered throughout the Study Area that exhibit elevated TCDD TEQ levels. One of these subareas is between RM 6.5 and 7.5 along both the east and west banks of the river. These areas coincide with several currently identified known or likely historical industrial dioxin and/or furan sources. In addition, some surface water and biota (bass, sculpin, and crayfish) samples from this reach also show somewhat elevated concentrations. Elevated Areas of elevated PCDD/TCDD TEQ level contamination in sediment are located between RM 6.5 and 7.5, adjacent to Arkema and Rhone-Poulenc.~~

#### **Section 10.2.6.2 Potential Sources and Pathways of Total Chlordanes**

The text in this section needs to be modified to more accurately describe potential sources and pathways for total chlordane and to be consistent with referenced Table 10.2-7. Specifically:

- BCS concurs with retaining text as recommended by LWG in their August 29, 2014 correspondence because it more fully describes the distribution of chlordane in river sediments. Without this detail, the text inappropriately focuses the discussion on RM 6.9W and Rhone Poulenc.
- Rhone-Poulenc never discharged manufacturing waste to the river as currently stated in the text.
- The text ignores the fact that collected stormwater discharged to the river from former Rhone-Poulenc property was and is currently treated prior to discharge and done so under an NPDES permit.

Therefore, in addition to retaining the text as recommended by LWG, BCS requests that EPA make the following edits to the text:

~~Within the Study Area, the former Rhone Poulenc pesticide manufacturing facility is the only property currently identified as a potential source of chlordane. source of chlordanes currently identified is the former Rhone Poulenc pesticide manufacturing facility that historically discharged manufacturing waste and stormwater to the river at approximately RM 6.9, and site groundwater infiltrates to City of Portland outfall OF 22B. The Rhone Poulenc facility manufactured herbicides and formulated organochlorine insecticides during its operational years of 1943 to 1990. Insecticide formulation ceased in 1969.~~

~~The known sources of total chlordanes to the Study Area are summarized in Table 10.2-7 and Panels 10.2-6A-C and are limited to current and/or historically complete pathways for stormwater at one site. However, based on the distribution of chlordane in nearshore sediments in the study area, is indicative that other sources are must may also be present. Its widespread use in termite control suggests that chlordane may have been used as an insecticide at other facilities in the harbor.~~

##### ~~10.1.1.1.1 Stormwater/Wastewater/Overland Transport~~

~~Historical known pathways for stormwater exist at the Rhone Poulenc facility, including infiltration of contaminated groundwater into the storm system and the City of Portland outfalls, specifically OF 22B (RM 6.9W). Total chlordanes have been detected in upland soils at the former Rhone Poulenc property, and stormwater is a likely complete historical pathway. Historically, manufacturing wastewater from Rhone Poulenc was discharged to Doane Lake, which occasionally discharged to the river via a historical drainage ditch from 1972 to 1980. This ditch~~

entered the river near RM 6.9, an area with elevated surface and subsurface sediment total chlordanes concentrations. Currently, site stormwater is collected, treated and discharged by pipeline through WR-6, also located at RM 6.9W under a NPDES permit. Groundwater potentially containing chlordanes from the former Rhone-Poulenc facility historically infiltrated in the City of Portland Outfall 22B storm sewer system, which also discharges at RM 6.9W.

No current known or likely complete overland transport pathways for total chlordanes have been identified.

#### **Section 10.2.6.4 Relationship of Sources to Distribution of Total Chlordanes**

BCS's comments to this section are similar to those of Section 10.2.6.2. We request that EPA make the following edits to more accurately describe potential sources and distribution of total chlordanes.

Within the Study Area, ~~the only source of chlordanes currently identified is~~ the former Rhone Poulenc ~~pesticide manufacturing facility is the only property currently identified as a potential source of chlordanes. However, the distribution of chlordanes in nearshore sediments in the study area indicates that other sources are present. that historically discharged manufacturing waste and stormwater to the river at approximately RM 6.9.~~ Total chlordanes have been detected in upland soils and groundwater at the ~~former Rhone Poulenc property is site, and stormwater is a complete historical pathway. Infiltration of contaminated groundwater to the storm system draining OF-22B is addressed in Section 10.2.3.2.2. Potential pathways from the former Rhone Poulenc site to the river near RM 6.9 are described in Section 10.2.6.2. However, based on the distribution of chlordanes in nearshore sediments, other sources must be present.~~

#### **Section 10.2.7.2. Potential Aldrin/Dieldrin Sources and Pathways**

Similar to the discussion of total chlordanes, the text regarding potential aldrin and dieldrin sources and pathways needs to be modified to more accurately describe the potential sources and pathways and to be consistent with Tables 10.2-8 and 10.2-9. Specifically:

- BCS concurs with retaining text that more fully describes the distribution of aldrin and dieldrin in river sediments and other media, as recommended by LWG in their August 29, 2014 correspondence. Without this detail, the text inappropriately focuses the discussion on RM 6.9W and Rhone Poulenc.
- Rhone-Poulenc never discharged manufacturing waste to the river as currently stated in the text.
- The text ignores the fact that all stormwater discharged to the river from former Rhone-Poulenc property was and is currently treated prior to discharge and done so under an NPDES permit.
- BCS recommends moving the sentence regarding atmospheric deposition, but deleting the statement regarding "quantification". Atmospheric deposition has been estimated (see Figure 10.2-19A)

Therefore, in addition to retaining the text as recommended by LWG, BCS requests that EPA make the following edits to the text:

~~Similar to total chlordanes, the~~ former Rhone Poulenc facility is the only individual property currently identified as a potential source of aldrin and dieldrin ~~currently identified~~ within the Study Area. Atmospheric deposition is a potential historical and current pathway, but has not been quantified.

~~is the former Rhone Poulenc pesticide manufacturing facility that historically discharged manufacturing waste and stormwater to the river at approximately RM 6.9.~~ Aldrin and dieldrin

have been detected in upland soils at the former Rhone Poulenc property. ~~is site, and stormwater is a known complete current and historical pathway.~~

~~Current and historical known complete pathways for aldrin and dieldrin in stormwater exist at the Rhone Poulenc facility, including contaminated groundwater infiltration into the storm system of OF-22B (RM 6.9W) (see Section 10.2.3.2.2). Historically, manufacturing wastewater from Rhone Poulenc was routed to Doane Lake, which occasionally discharged to the river via a historic drainage ditch that discharged. This ditch entered the river near RM 6.9 from 1972 to 1980. Currently site stormwater is collected, treated and discharged by pipeline through WR-6, also located at RM 6.9W, under a NPDES permit. an area with elevated surface sediment aldrin concentrations. Currently site stormwater is discharged through WR-6, also located at RM 6.9W.~~

No current known or likely complete overwater or riverbank erosion pathways for aldrin or dieldrin have been identified.

~~Atmospheric~~ Atmospheric deposition is a potential historical and current pathway, but has not been quantified.

#### **Section 10.2.7.4 Relationship of Sources to Distribution of Aldrin and Dieldrin**

BCS's comments to this section are similar to those of the sections discussed above. We request that EPA make the following edits to more accurately describe potential sources and distribution of aldrin and dieldrin.

Aldrin and dieldrin have been detected in upland soils and groundwater at the former Rhone Poulenc property. Potential pathways from the former Rhone Poulenc site to the river near RM 6.9 are described in Section 10.2.7.2. ~~Current and historical known complete pathways for aldrin and dieldrin in stormwater exist at the Rhone Poulenc facility, including contaminated groundwater infiltration into the storm system of OF-22B (RM 6.9W) (see Section 10.2.3.2.2). Historically, manufacturing wastes from Rhone Poulenc were routed to Doane Lake, which occasionally discharged to the river via a historic drainage ditch that discharged. This ditch entered the river near RM 6.9. Currently site stormwater is discharged through WR-6, also located at RM 6.9W.~~ Atmospheric deposition is a potential historical and current pathway, but has not been quantified. an area with elevated surface sediment aldrin concentrations. Currently site stormwater is discharged through WR-6, also located at RM 6.9W.

No current known or likely complete overwater or riverbank erosion pathways for aldrin or dieldrin have been identified. ~~Atmospheric~~ Atmospheric deposition is a potential historical and current pathway, but has not been quantified.

BCS appreciates EPA's time to consider the above edits and clarifications. Should you have any questions regarding this letter, please contact Joan Underwood of Quantum Management Group at (503) 278-1837 or [junderwood@qmg-inc.com](mailto:junderwood@qmg-inc.com).

Sincerely,

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